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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/704,761	11/03/2000	Sang-Seog Kang	IK-011	4364

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EXAMINER

ABDULSELAM, ABBAS I

ART UNIT	PAPER NUMBER
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2674

DATE MAILED: 05/21/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/704,761

Applicant(s)

KANG, SANG-SEOG

Examiner

Abbas I Abdulsalam

Art Unit

2674

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections 35 U.S.C. 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Caldwell et al. (USPN 5153572) in view of Tsuchiya et al. (USPN 5065168) and Hamilton (USPN 4081700).

Regarding claims 1, 10 and 18, Caldwell teaches a touch sensitive control circuit (10) including comparators (U2, U3), and a detection means (102) for detecting a voltage signal output (72). See col. 3, lines 8-25 col. 4, lines 17-22, 50 and Fig 1a. Caldwell teaches that the detection means also has time delay means expressed in terms of capacitor (122) and resistor (123). See col. 5, lines 25-26. Caldwell teaches the detection means in terms of a switching of either outputs (83) or (85). See col. 4, lines 66-67. However, Caldwell does not disclose a comparison means for compensating the level of a reference signal for a variation in temperature such that a wave shaped signal is produced as a result of the comparison. Tsuchiya on the other hand teaches compensation means electrically connected to temperature detecting means and outputs an appropriate signal after comparing the temperature and reference signals. See col. 2, lines 24-36. For example, Tsuchiya teaches temperature compensation circuit including RC-charging-discharging circuit (49) that outputs signals of waveforms type, and an output circuit

Art Unit: 2674

(50), which admits the output from the charging -discharging circuit along with a reference signal in order to output a temperature compensation signal. See col. 3, lines 40-48 and Fig 4.

Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify Caldwell's touch-sensitive control circuit to include Tsuchiya's method of temperature compensation including the comparison technique. One would have been motivated in view of the suggestion in Tsuchiya that the temperature compensation method equivalently provides the desired compensation means for a variation in temperature. The use of temperature compensation helps function pulse generation circuit as taught by Tsuchiya.

Caldwell has been described above. However, Caldwell does not compare a signal from a touch sensor to a reference value. Hamilton on the other hand teaches a reference detector (20) providing a reference signal to compare with a hum pickup signal sensed by the touch receptor. See col. 8, lines 54-61 and Fig 1.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify Caldwell's touch-sensitive control circuit to adapt Hamilton's touch detection technique as used in Fig 1. One would have been motivated in view of the suggestion in Hamilton that the touch receptor sensing the signal is equivalent to the desired touch sensor. The use of touch receptor helps function the touch control switch as taught by Hamilton.

Regarding claim 2, Caldwell teaches the charging of a capacitor after a user contacts a touch pad (32). See col. 2, lines 44-47

Regarding claims 3-4, Caldwell teaches a user touching on pad (30), a comparator (U3), and output (72) expressed with respect to reference voltage at junction (66). See col. 3, lines 27-38.

Art Unit: 2674

Regarding claims 5-7, 9, 20-21 and 23, Caldwell teaches a control circuit performing logic operations on the basis of ratiometric relationship of signals differing in proportion to the supply of voltage provided. See col. 1, lines 65-67. Caldwell further teaches a touch sensitive control circuit including temperature compensated comparators U1 through U8 performing a variety of comparative tasks. See Fig 1.

Regarding claim 8, Caldwell teaches an output (92) that is connected through a diode (96) to the base (98) of a transistor Q1. See col. 4, lines 1-2 and Fig 1b.

Regarding claim 11, Tsuchiya teaches a temperature sensor including thermistor, which has specific temperature resistance characteristic. Col. 1 line 23—27

Regarding claims 12-17, 19 and 22, Tsuchiya teaches a CPU (41), and a thermistor (3a) with respect to a temperature compensation signal (T) and a switch that solves the problem of instability by altering reference signals. Col. 5, lines 33-55.

Art Unit: 2674

Conclusion

2. The prior art made of record and not relied upon is considered to applicant's disclosure.

The following arts are cited for further reference.

U.S. Pat. No. 5,943,516 to Uchiyama

U.S. Pat. No. 6,445,383 to Chambers et al.

Art Unit: 2674

3. Any inquiry concerning this communication or earlier communication from the examiner should be directed to **Abbas Abdulsalam** whose telephone number is **(703) 305-8591**. The examiner can normally be reached on Monday through Friday (9:00-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard Hjerpe**, can be reached at **(703) 305-4709**.

Any response to this action should be mailed to:

Commissioner of patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314

Hand delivered responses should be brought to Crystal Park II, Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology center 2600 customer Service office whose telephone number is (703) 306-0377.

Abbas Abdulsalam

Examiner

Art Unit 2674



RICHARD HJERPE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600